

CLAIMS

1. Branched, substantially unsaturated fatty alcohol sulfates which are obtainable by

- (a) dimerizing unsaturated C₁₆₋₂₂ fatty acids in known manner,
- 5 (b) removing the monomer fraction accumulating in the dimerization step,
- (c) converting the branched, substantially unsaturated fatty acids present in this fraction into the corresponding fatty acid methyl esters,
- (d) hydrogenating the branched, substantially unsaturated fatty acid methyl esters with the double bonds intact to form the corresponding branched,
- 10 substantially unsaturated fatty alcohols and
- (e) sulfating and neutralizing the branched, substantially unsaturated fatty alcohols in known manner with the double bond intact.

2. A process for the production of branched, substantially unsaturated
15 fatty alcohol ether sulfates in which

- (a) unsaturated C₁₆₋₂₂ fatty acids are dimerized in known manner,
- (b) the monomer fraction accumulating in the dimerization step is removed,
- 20 (c) the branched, substantially unsaturated fatty acids present in this fraction are converted into the corresponding fatty acid methyl esters,
- (d) the branched, substantially unsaturated fatty acid methyl esters are hydrogenated with the double bonds intact to form the corresponding branched, substantially unsaturated fatty alcohols which are then
- 25 (e) sulfated and neutralized in known manner.

3. A process as claimed in claim 2, characterized in that the monomer fraction accumulating in the dimerization step is first subjected to fractional crystallization and the liquid phase obtained is esterified, optionally after
30 distillation.

4. A process as claimed in claims 2 and/or 3, characterized in that the

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methyl esters and/or the fatty alcohols are subjected to distillation and/or fractional crystallization.

5. A process as claimed in at least one of claims 2 to 4, characterized in that the branched, substantially unsaturated fatty alcohols are sulfated with sulfur trioxide or chlorosulfonic acid.

6. A process as claimed in at least one of claims 2 to 5, characterized in that the branched, substantially unsaturated fatty alcohols are sulfated in a reactor operating on the falling film principle.

7. A process as claimed in at least one of claims 2 to 6, characterized in that the branched, substantially unsaturated fatty alcohols are sulfated at temperatures of 25 to 90°C.

8. A process as claimed in at least one of claims 2 to 7, characterized in that the branched, substantially unsaturated fatty alcohols are sulfated in a molar ratio of fatty alcohol to sulfating agent of 1:0.95 to 1:1.8.

9. The use of the branched substantially unsaturated fatty alcohol sulfates claimed in claim 1 for the production of laundry detergents, dishwashing detergents, cleaners and softeners.

10. The use of the branched, substantially unsaturated fatty alcohol sulfates claimed in claim 1 for the production of cosmetic and/or pharmaceutical preparations.

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